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Feelings of Revenge, Retaliation Motive, and Posttraumatic Stress Reactions
in Crime Victims

Ulrich Orth

University of Berne, Switzerland

Leo Montada

University of Trier, Germany

Andreas Maercker

University of Trier, Germany

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Ulrich Orth
Department of Psychology
University of Berne
Muesmattstrasse 45
3012 Berne
Switzerland

ulrich.orth@psy.unibe.ch
Tel +41 31 631 40 43
Fax +41 31 631 82 12

Abstract

Individuals with posttraumatic stress disorder (PTSD) are often said to experience strong feelings of revenge. However, there is a need for confirmatory empirical studies. Therefore, in a study of 174 victims of violent crimes, the relation between feelings of revenge and posttraumatic stress reactions was investigated. Feelings of revenge were correlated with intrusion and hyperarousal, but not with avoidance. Feelings of revenge explained incremental variance of intrusion and hyperarousal when the variance explained by victimological variables was controlled for. The retaliation motive implied in feelings of revenge did not account for the relation between feelings of revenge and posttraumatic stress reactions. However, the relation was moderated by the time since victimization. Therefore, feelings of revenge must presumably be regarded as a maladaptive coping reaction to experienced injustice, but not in the first period after victimization.

Key Words: crime victims; retaliation; posttraumatic stress disorder

Feelings of Revenge, Retaliation Motive, and Posttraumatic Stress Reactions in Crime Victims

Victimizations by rape, physical assault, and robbery are traumatic experiences. Epidemiological studies show that the prevalence of posttraumatic stress disorder (PTSD) is high in victims of violent crimes. Prevalence values range from 35% to 70% for rape victims, from 2% to 58% for victims of physical assault, and from 18% to 28% for victims of robbery (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Kilpatrick et al., 1989).

Furthermore, victimizations by violent crimes are experiences of injustice, which provoke coping reactions (cf. Montada, 1994). Cognitive coping reactions that subjectively reduce injustice are, for example, minimizing the harm as well as excusing and justifying the perpetrator's behavior. Behavioral coping reactions intended to more objectively counter-balance injustice may take the form of reporting the crime to the police, demanding the perpetrator's punishment, claiming compensation, or engaging in self-administered justice and revenge.

The number of crime victims who actually put revenge into practice is unknown. Likewise, little empirical information about the prevalence of feelings of revenge in crime victims is available (cf. Frijda, 1994; Vidmar, 2000). In one study of victims of ethnically motivated violence, between 41% and 46% reported strong feelings of revenge (Cardozo, Kaiser, Gotway, & Agani, 2003).

Feelings of revenge shall be defined here by the following cognitive components (cf. Montada, 1993; Vidmar, 2000), according to the appraisal theory of emotion (cf. Scherer, 1999): the individual perceives him- or herself to be severely harmed by another person, the individual holds the other person responsible for the harm (no excuses are recognized), the individual assesses the harm as morally wrong (no justifications are recognized), and, crucially, the individual perceives a motivation to retaliate.

Feelings of Revenge and PTSD

Descriptions of PTSD mention that individuals with PTSD sometimes experience strong feelings of revenge (cf. Ehlers & Clark, 2000). Excessive preoccupation with fantasies about revenge has been considered to be a consequence of the disordered emotion regulation in complex PTSD after prolonged and repeated trauma (Herman, 1992).

However, there is a need for empirical studies. Only two studies provide information about the relation between feelings of revenge and PTSD; however, in both studies, feelings of revenge were measured by single items. In a study of victims of a natural disaster, feelings of revenge against the public authorities contributed to the prediction of PTSD with a low but significant regression coefficient (Goenjian et al., 2001). In the study of Cardozo et al. (2003) cited above, feelings of revenge were more frequent in individuals with PTSD compared to those without PTSD.

Therefore, the first objective of this study is to investigate the relation between feelings of revenge and PTSD more closely and to analyze the specific relations with different posttraumatic stress reactions like posttraumatic intrusion, avoidance, and hyperarousal. The study tests the hypothesis that feelings of revenge in victims of violent crimes correlate with posttraumatic intrusion and hyperarousal. The study further tests whether feelings of revenge explain incremental variance when controlling the variance explained by standard victimological variables such as severity of physical harm and emotional support. However, feelings of revenge should correlate to a lesser extent with posttraumatic avoidance, in particular with cognitive avoidance symptoms, because avoidance of trauma-related memories should reduce the frequency and intensity of trauma-related feelings of revenge.

Feelings of Revenge and Anger

Whereas data concerning feelings of revenge are sparse, a number of empirical studies have investigated the relation of anger and PTSD. The results of these studies are described

below as they may help to generate hypotheses about the relation between feelings of revenge and PTSD.

However, similarities and differences between feelings of revenge and anger should be described first. On the one hand, the similarities consist in the perception of a harming event, the attribution of responsibility to another person, and the perception of a lack of justification of the other person's behavior. On the other hand, feelings of revenge differ from anger in one essential aspect: anger may motivate not only to aggressive reactions, but also to non-aggressive reactions (cf. Averill, 1983). Feelings of revenge, in contrast, include the aggressive retaliation motive by definition.

Therefore, the second objective of this study is to test whether the retaliation motive, which is the key component of feelings of revenge in contrast to anger, accounts for the relation between feelings of revenge and posttraumatic stress reactions or not. For this reason, an additional measure of the motivational component of feelings of revenge will be used, besides the measure of feelings of revenge. Whether the retaliation motive accounts for the relation or not can be tested by mediation analysis (Baron & Kenny, 1986).

Anger and PTSD

Empirical studies of the relation between anger and PTSD show that victims have higher trait-anger compared to the test norms of community samples, and that victims with PTSD show higher trait-anger compared to victims without PTSD (Schützwohl & Maercker, 2000). In that study, trait-anger was substantially correlated with posttraumatic intrusion and hyperarousal, but not with posttraumatic avoidance. However, in another study victims and non-victims did not differ with respect to trait-anger, nor did victims with PTSD and without PTSD (Riggs, Dancu, Gershuny, Greenberg, & Foa, 1992). The results for anger expression variables show that in most studies both anger-out and anger-in correlated with severity of PTSD (Chemtob, Hamada, Roitblat, & Muraoka, 1994; Feeny, Zoellner, & Foa, 2000; Frueh,

Henning, Pellegrin, & Chobot, 1997; Novaco & Chemtob, 2002; Schützwohl & Maercker, 2000).

Interestingly, in the longitudinal study of Feeny et al. (2000) the correlation between anger expression and PTSD severity became higher with increasing time since victimization, rising from virtually zero in Week 2 to a medium level in Week 12. On the whole, the studies on anger and PTSD cited above have generally revealed insignificant correlations for short terms (days, weeks; cf. Feeny et al., 2000; Riggs et al., 1992) and substantial correlations for longer terms (months, years, decades; cf. Chemtob et al., 1994; Feeny et al., 2000; Frueh et al., 1997; Schützwohl & Maercker, 2000).

Therefore, given these time-dependent results for anger and PTSD, the third objective of this study is to test the hypothesis that the time since victimization moderates the relation between feelings of revenge and posttraumatic intrusion and hyperarousal, more precisely that the relation becomes stronger with increasing time since victimization.

Method

Participants

The study was part of a research project on the psychological consequences of criminal proceedings among victims of violent crimes. Participants were contacted with the help of the German victim assistance association *Weisser Ring*. The individuals surveyed were chosen at random, and were sent a questionnaire with a request to take part in the study. Participant anonymity was protected. The response rate was 32%. The sample was drawn from the population of victims who had received financial support by the victim assistance association within the last five years, i.e., the victims' legal costs were paid.

The sample consisted of 174 adult victims of violent crimes, including 84 victims of rape and 90 victims of non-sexual assault (bodily harm, robbery, deprivation of liberty). Eighty-four percent of the participants were women and 16% were men. The mean age at the

time of the study was 37.5 years ($SD = 12.2$, range 17-65 years). Ninety-five percent of the participants were of German nationality. Mean time since victimization was 4.1 years ($SD = 2.2$ years). Level of school education was as follows: 41% had not finished school or finished the obligatory 9 years; 59% had finished high school (10 years) or academic-track high school (ca. 13 years). The educational level of the sample is roughly representative of the German population. Information on socio-economic status was not collected, but level of education may be taken as an indicator of the socio-economic status. In all participants' cases criminal proceedings had taken place, and 94% of the victims had reported the crime to the police themselves or had agreed to having it reported. Mean time since the end of the criminal proceedings was 3.0 years ($SD = 1.9$ years).

Several characteristics of the population from which the sample was drawn should be documented in order to allow for the assessment of differences between the sample and the population (see discussion section). In the year 2001, the association gave support to about 10,000 victims. Of these, 35% were victims of sexual assault, 43% were victims of physical assault, robbery, or theft, and 22% were victims of other crimes. In 22% of the cases victim age was 20 years or less, in 42% between 21 and 40 years, in 22% between 41 and 60 years, and in 13% 60 years or more. 73% of the victims were women and 27% were men.

Measures

Posttraumatic stress reactions. The Impact of Event-Scale--Revised, IES-R (Weiss & Marmar, 1997; for the German version see Maercker & Schützwohl, 1998) was used to assess the frequency of posttraumatic stress reactions in the preceding seven days. The intrusion subscale includes 7 items (Cronbach's $\alpha = .87$ in this study); the avoidance subscale includes 8 items (Cronbach's $\alpha = .78$ in this study); and the hyperarousal subscale includes 7 items (Cronbach's $\alpha = .87$ in this study). The value range is 0 to 35 for intrusion and hyperarousal, and 0 to 40 for avoidance. In the German IES-R validation study,

a linear regression equation was determined that can be used to estimate the PTSD rate in samples, with a sensitivity of .70 to .76 and a specificity of .88 to .89 (Maercker & Schützwohl, 1998).

Feelings of revenge. The participants were asked to assess the strength of feelings of revenge in the preceding four weeks using three items (Cronbach's alpha = .92 in this study): „How often did thoughts come to mind, without your wanting them to, about doing something to the perpetrator?“, “How often did you fantasize about getting back at the perpetrator for what he or she did to you?“, „Did you experience feelings of revenge?“. Answers were measured on a 6-point scale (0 = *not at all*, 5 = *very often and very strongly* respectively).

Retaliation motive. The strength of the retaliation motive was assessed using four statements with respect to the victim's punishment goals at the time of the criminal trial (Cronbach's alpha = .80 in this study). Information about the construction and validation of the scale has been documented (Orth, 2003). The items were: “It was important to me that the perpetrator should be punished to bring satisfaction to me, the victim.”; “It was important to me that the perpetrator should be punished to make him/her suffer, as I suffered by his action.”; “It was important to me that the perpetrator should be punished to even out the wrong that the offender had done.”; “It was important to me that the perpetrator should be punished to atone for the perpetrator's guilt.” Answers were measured on a 6-point scale (0 = *not at all important*, 5 = *very important*).

Physical harm. Severity of physical harm was assessed with two items (Cronbach's alpha = .79). Participants assessed on the one hand “physical injuries and pain at the time of the victimization”, and on the other hand “enduring bodily harm (disabilities, pain, disfigurement)”. Answers were measured on a 6-point scale (0 = *not at all*, 5 = *very serious*).

Emotional support. Emotional support by relatives and friends was assessed with four items (Cronbach's alpha = .90): “In the time since the victimization, relatives or friends have

conducted helpful conversations with me.”; “In the time since the victimization, relatives or friends have given me consolation and hope.”; “In the time since the victimization, relatives or friends have shown me that they like me.”; “In the time since the victimization, relatives or friends have shown understanding for my feelings and needs.” Answers were measured on a 6-point scale (0 = *not at all right*, 5 = *completely right*).

Results

Table 1 shows means, standard deviations, and simple correlations of the measures used. For the IES-R subscales, the scores represent means and standard deviations of the subscales; for the other measures, the scores represent means and standard deviations of the items. The PTSD sample rate amounts to 52% according to the regression equation mentioned above (cf. Maercker & Schützwohl, 1998).

Testing the relation hypothesis

Feelings of revenge have significant correlations at a medium level with intrusion and hyperarousal, but not with avoidance. Thus, the simple correlations corroborate the relation hypothesis. However, it is crucial to show that the relation remains significant when other predictors of posttraumatic stress reactions are simultaneously taken into account. Therefore, hierarchical regression analyses were conducted.

Table 2 summarizes the results of the hierarchical regression analysis predicting intrusion. The results show that feelings of revenge explain incremental variance (Step 2, $\Delta R^2 = .04$, $p = .002$) when controlling for the variance explained by physical harm, emotional support, age, and time since victimization (Step 1, $\Delta R^2 = .30$, $p = .000$). The results of the hierarchical regression analysis predicting hyperarousal are structurally similar: Step 1 results in $\Delta R^2 = .20$, $p = .000$, and Step 2 in $\Delta R^2 = .04$, $p = .004$. In contrast, the variance explained in the regression analysis predicting avoidance is substantially lower: Step 1 results in $\Delta R^2 = .05$, $p = .063$, and Step 2 in $\Delta R^2 = .01$, $p = .136$.

Testing the mediation hypothesis

In Step 3 of the hierarchical regression analysis the retaliation motive is included to test whether it accounts for the relation, i.e. mediates the relation, between feelings of revenge and posttraumatic stress reactions. To establish mediation, three conditions must be fulfilled (cf. Baron & Kenny, 1986): First, the predictor (feelings of revenge) must correlate with the mediator (retaliation motive). In this study, the correlation between the feelings of revenge and the retaliation motive is $r = .27, p = .000$ (Table 1). Second, the predictor (feelings of revenge) must correlate with the criterion (posttraumatic stress reactions). In this study, as reported above, feelings of revenge significantly correlate with posttraumatic intrusion and hyperarousal at a medium level (Table 1). Third, the mediator (retaliation motive) must affect the criterion (posttraumatic stress reactions) when controlling for the predictor in a multiple regression analysis. The regression coefficient of the retaliation motive should have a significant positive value, and the regression coefficient of feelings of revenge should significantly decrease, if the mediation hypothesis is right.

However, the regression coefficient of the retaliation motive is non-significant (for all IES-R subscales), and the regression coefficient of feelings of revenge does virtually not change after inclusion of the retaliation motive (for all IES-R subscales). Thus, the retaliation motive does not mediate the relation between feelings of revenge and posttraumatic stress reactions. Step 3 results in $\Delta R^2 = .01, p = .232$, for intrusion, $\Delta R^2 = .00, p = .615$, for avoidance, and $\Delta R^2 = .00, p = .891$, for hyperarousal.

Testing the moderation hypothesis

In Step 4 of the hierarchical regression analysis the statistical interaction of feelings of revenge and time since victimization is included to test the moderator effect of time since victimization on the relation between feelings of revenge and posttraumatic stress reactions. To establish moderation, one condition must be fulfilled (cf. Baron & Kenny, 1986): The

interaction of the predictor (feelings of revenge) and the moderator (time since victimization) must have a significant effect on the criterion (posttraumatic stress reactions). Step 4 results in $\Delta R^2 = .04$, $p = .001$, for intrusion, $\Delta R^2 = .01$, $p = .134$, for avoidance, and $\Delta R^2 = .02$, $p = .038$, for hyperarousal.

Thus, time since victimization moderates the relation of feelings of revenge with intrusion and hyperarousal, but not avoidance. Figure 1 illustrates the moderator effect by linear regression of time since victimization predicting intrusion, separately computed for victims with low feelings of revenge (first quartile = 0.00), median feelings of revenge (second quartile = 1.00), and strong feelings of revenge (third quartile = 3.00). The upper border of the time axis is set to 8 years, as only 5% of the participants score above that and as the significance of the data from these individuals should not be overvalued. In the first period after the victimization, feelings of revenge do not allow for prediction of posttraumatic intrusion, whereas in later periods strong feelings of revenge are associated with significantly more frequent intrusion than low feelings of revenge.

Discussion

The results suggest that feelings of revenge are significantly linked to posttraumatic stress reactions in crime victims, moderated in a meaningful way by the length of time since the victimization. Feelings of revenge explain substantial proportions of variance in posttraumatic intrusion and hyperarousal, particularly if their effect in interaction with time since victimization is taken into account. Given that the onset and maintenance of posttraumatic stress reactions is influenced by multiple psychological factors (cf. Brewin & Holmes, 2003), the incremental variance explained by feelings of revenge is considerable.

Feelings of revenge are related to posttraumatic stress reactions

The first objective of this study was to investigate the relation between feelings of revenge and PTSD. The results show that feelings of revenge in victims of violent crimes

correlate at a medium level with posttraumatic intrusion and hyperarousal, but not with posttraumatic avoidance. Feelings of revenge explain significant incremental variance in intrusion and hyperarousal, when the variance explained by standard victimological variables like severity of physical harm, emotional support, victim age, and time since victimization is controlled for.

This result is consistent with data reported in a study of victims of a natural disaster (Goenjian et al., 2001), and with studies of reactions to less severe transgressions in social relationships using the intrusion subscale of the IES (McCullough et al., 1998; McCullough, Bellah, Kilpatrick, & Johnson, 2001). However, in the study by McCullough et al. (2001) feelings of revenge were also correlated with the avoidance subscale of the IES.

The retaliation motive does not account for the relation

The second objective of the study was to test whether the retaliation motive accounts for the relation between feelings of revenge and posttraumatic stress reactions. However, the strength of the retaliation motive, assessed by an additional measure, did not correlate with posttraumatic stress reactions and did not mediate the relation between feelings of revenge and posttraumatic stress reactions.

Thus, this result suggests that it is not the retaliation motive implied in feelings of revenge that accounts for the relation, but that other factors are responsible. These factors might also explain the relation between anger and posttraumatic stress reactions, given that the key difference between feelings of revenge and anger, the retaliation motive, is not responsible for the relation between feelings of revenge and posttraumatic stress reactions.

A promising candidate for an explanation of the relation might be the ruminative character of feelings of revenge. Theory suggests that feelings of revenge are often ruminative, as one origin of rumination consists in discrepancies between the present state and central goals that are not easily attainable or that the individual does not know how to attain

(Gold & Wegner, 1995; Martin & Tesser, 1996). Presumably, this frequently applies for the goal of revenge among victims of violent crimes.

Thus, rumination on victimization-related themes might be the crucial link between feelings of revenge and posttraumatic stress reactions. Rusting and Nolen-Hoeksema (1998) have shown that rumination about the causes and consequences of angry moods maintains or increases the angry mood, and they explain the link by associative network theories of memory (cf. Bower, 1981). Likewise, research on catharsis theory has shown that rumination about anger-eliciting events increases subsequent anger and aggressive behavior (Bushman, 2002), consistent with the cognitive-neoassociationistic theory of aggression (Berkowitz, 1990). Furthermore, individual differences in rumination on offenses suffered have been documented that can explain the maintenance of feelings of revenge among crime victims (Caprara, 1986). But rumination about victimization-related themes is presumably also linked to posttraumatic intrusions, likewise based on associative networks (cf. Ehlers & Clark, 2000; for empirical results see Steil & Ehlers, 2000). The investigation of these mediating links might be a starting point for further studies.

Time since victimization moderates the relation

With respect to the third objective of the study, the results show that the relation of feelings of revenge with intrusion and hyperarousal is moderated by time since victimization, and that the relation becomes substantially stronger with increasing time since victimization. The statistical interaction of feelings of revenge and time since victimization explains further substantial variance proportions in posttraumatic intrusion. The data are consistent with the assumption that in the first period after a victimization feelings of revenge are not a maladaptive emotional coping reaction to the experience of injustice, and that it is only with increasing time that feelings of revenge become more and more maladaptive.

Again, the potentially ruminative character of feelings of revenge might offer an explanation. Continuing rumination about victimization-related themes should increasingly strengthen the associations between thoughts and emotions involved because they are simultaneously activated. At the beginning, the individual might occasionally switch over from intrusions of the traumatic experiences to rumination on revenge and vice versa. Then, by and by, switching over might become more frequent. As a consequence, feelings of revenge and posttraumatic intrusion would increasingly covary with each other.

Limitations of the study and implications for future research

Sample characteristics account for some of the limitations. First, the response rate was only 32% and the non-responders might differ in some unknown way from the sample with respect to the key variables of the study. Though it is generally difficult to obtain high response rates in surveys with crime victims, the low response rate restricts the generality of the findings. Non-responders might suffer from stronger feelings of revenge or from stronger posttraumatic stress reactions, and consequently might not have wanted to participate in the study because it would have meant having to reflect on potentially aversive themes. However, deviating means in a sample do not necessarily affect the relations between variables. Moreover, the sample did not substantially differ from the population from which the sample was drawn with respect to demographic variables, as can be seen from the data in the method section. The high proportion of women in this study is a characteristic of the population, and the assault type proportions and the participants' age in this study correspond sufficiently with the available population data as well.

A second significant factor in sample selection is represented by the fact that nearly all participants reported the crime to the police themselves or agreed to having it reported. Thus, the victims surveyed in this study presumably have stronger feelings of revenge than victims who decide not to report the crime to the police. Moreover, criminal proceedings had taken

place for all participants and dissatisfaction with the court decision could increase the maladaptivity of feelings of revenge. These factors additionally restrict the generality of the findings. Therefore, in future studies the comparison of victims who had and had not reported the crime to the police would be of interest. Moreover, the relation of feelings of revenge and posttraumatic stress reactions could also be studied in samples with victims of non-criminal victimization, such as motor vehicle accidents.

A further limitation is the cross-sectional study design, which restricts the validity of conclusions about the time-dependent change in maladaptivity of feelings of revenge. The present study only corroborates the plausibility of this time course. Therefore, future studies should use longitudinal study designs. Moreover, due to the cross-sectional study design, conclusions about the causality of the relation between feelings of revenge and posttraumatic stress reactions are not valid. The investigation of the causal direction of the relationship and mediating factors which may explain the relationship might benefit from drawing both on theories of cognitive processing after traumatic experiences (cf. Creamer, Burgess, & Pattison, 1992; McFarlane, 1992) and on theories of affective human aggression (cf. Anderson & Bushman, 2002).

Future studies should also include measures of both feelings of revenge and anger in order to analyze the degree of convergence in the relations between these emotions and posttraumatic stress reactions. The role of feelings of revenge in the treatment of PTSD should be investigated, as has been done with respect to anger and PTSD (cf. Foa, Riggs, Masie, & Yarczower, 1995). If feelings of revenge have a causal effect on the maintenance of posttraumatic stress reactions, specific interventions should be included in the treatment of PTSD that help the individual to cope more effectively with the injustice suffered.

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Author Note

Ulrich Orth, Department of Psychology, University of Berne, Switzerland; Leo Montada, Department of Psychology, University of Trier, Germany; Andreas Maercker, Department of Psychology; University of Trier, Germany.

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Correspondence concerning this article should be addressed to Ulrich Orth, Department of Psychology, University of Berne, Muesmattstrasse 45, 3012 Berne, Switzerland. E-mail: ulrich.orth@psy.unibe.ch.

Table 1

Means, Standard Deviations, and Correlations of the Study Variables (168 ≤ N ≤ 173)

Variables	<i>M</i>	<i>SD</i>	Correlations								
			1	2	3	4	5	6	7	8	9
1. Intrusion (IES-R)	20.00	9.40	--								
2. Avoidance (IES-R)	20.65	9.89	.45**	--							
3. Hyperarousal (IES-R)	20.13	10.29	.80**	.57**	--						
4. Feelings of revenge	1.69	1.82	.28**	.14	.24**	--					
5. Retaliation motive	3.55	1.37	.00	.09	.06	.27**	--				
6. Physical harm	2.40	1.79	.37**	.19*	.27**	.17*	.14	--			
7. Emotional support	3.71	1.36	-.32**	-.09	-.24**	-.12	.16*	.05	--		
8. Age	37.51	12.20	.22**	.12	.24**	-.16*	.07	.18*	.03	--	
9. Time since victimization	4.11	2.18	-.16*	-.01	-.14	-.04	-.03	-.02	.05	.02	--

* $p < .05$. ** $p < .01$.

Table 2

Summary of Hierarchical Regression Analysis Predicting Intrusion (N = 163)

Variables	Regression Coefficients for Intrusion			
	Step 1	Step 2	Step 3	Step 4
Step 1				
Physical harm	.35**	.31**	.31**	.32**
Emotional support	-.34**	-.31**	-.29**	-.28**
Age	.17*	.21**	.22**	.20**
Time since victimization	-.14*	-.13*	-.14*	-.34**
Step 2				
Feelings of revenge	--	.22**	.24**	-.18
Step 3				
Retaliation motive	--	--	-.08	-.09
Step 4				
Feelings of revenge	--	--	--	.51**
X time since victimization				
ΔR^2	.30**	.04**	.01	.04**

* $p < .05$. ** $p < .01$.

Figure Captions

Figure 1. Linear regression of time since victimization predicting intrusion (IES-R) in victims with low (1st quartile = 0.00), median (2nd quartile = 1.00), and strong (3rd quartile = 3.00) feelings of revenge.

